

11 May 1967

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[redacted]
Office of Research & Development
Room 606 - Ames Building

Dear Steve:

I want to thank you for your taking the time to appear with us in Red White's office today. I found your comments extremely constructive and very helpful. The whole experience is one which indicated to me the real value that there is to be had in a close relationship between our two offices.

I want to assure you that you can count on me for any help and assistance you may require. For my part, I intend to keep doing my best to impress upon people here the need to seek advice, guidance, and expertise from the people in ORD. It is my great hope that we can create a fruitful and productive relationship between the NPIC R&D Staff and your offices.

Thanks again for your time and trouble.

Best regards,

[redacted]
E. H. Knoche

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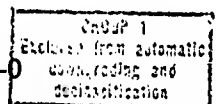
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FY-66 - HUMAN FACTORS RESEARCH PROGRAM

- TASK 1 - State-of-the-Art Review. To maintain cognizance of relevant historical and current literature, research, and research plans as part of the basis for recommendations and consultation to the Government, and to minimize duplication of work.
- TASK 2 - Image Interpreter Performance as a Function of Ambient Luminance and Display Illuminance. The contractor will obtain quantitative data to establish the efficiency of image interpreter performance as a function of imagery illuminance and environmental luminance.
- TASK 3 - Development of the Feasibility of a Continuous Reading Instrument for Measuring Visual Accommodation Without Interfering with the Image Interpreters' Task.
- TASK 4 - Quantitative Determination of Image Quality. Experimental Plan. To determine the nature and reliability of the functional relationship between photographic images having different levels of Modulation Transfer Function Areas and psychophysically scaled judgements of the interpretability of the imagery.
- TASK 5 - Image Interpreter Performance as a Function of Individual Work Pacing and Teaming. To perform a two-phase research program to provide quantitative information on (A) the effects of time limited pacing and work distribution on the completeness and accuracy of information extraction from aerial reconnaissance imagery, and (B) the assignment and utilization of two-man interpreter teams with a view to establishing more effective interpreter utilization for efficiently achieving task objectives.
- TASK 6 - Review of Sponsor Operations. The contractor is to review in depth and submit documentation of understanding of sponsor's operational imagery exploitation procedures, objectives, materials, and requirements.
- TASK 7 - Assessment of Value of Past and Current Research. The information developed in Task #6 will be used to select from the Task #1 S.O.A. information, research data directly related to customer procedures, materials, objectives and requirements.
- TASK 8 - Interpreter Performance Measurement Project. The contractor shall prepare a plan whose ultimate goal is the development of objective, reliable, valid, and practical measures of image interpreters' target search and recognition (scanning task) performances.

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- TASK 9 - Stereoscopic Viewing Project Definition. To examine those variables that exhibit possible relevance to customer interpreter performance as a function of stereoscopic vs monoscopic viewing.
- TASK 10 - Associated Contracts Review. The contractor shall serve as associate contractor and human factors consultant on other major Research and Development programs of the sponsor.
- TASK 11 - The Preparation of an Initial Recommendation Report and Briefing. To make specific written recommendations in draft form and provide oral briefings regarding a five-year program.

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Human Factors Research Program

Task #1. Interpreter Performance Measures

#1 Good
how? the plan
To develop performance test packages for assessing the relative accuracy, completeness, reliability and efficiency of interpreter performance.

Task #2. Technology Integration and Check Out Facility

Good if
will run
A utilization plan and facility design will be developed for T.I.C.O.F. The primary purpose of the facility is to evaluate new procedures and equipment to be introduced into the Center's operation.

Task #3. Interpreter/Machine Dynamics

Good
To provide the specification and designation of human factor requirements to insure effective interpreter utilization of equipment and procedures resulting from sponsors' technical development programs.

Task #4. Image Characteristics

How defined
at Central Intelligence - MTAF
and Film - grain
This task will complete a project started in FY-66 which was to establish a measure of image quality as it relates to interpretability.

Task #5. Image Utilization

Good
Not
(a) Compare the interpreters scanning performance under the alternate conditions of monoscopic viewing, stereo viewing, with manual alignment, and stereo viewing with automatic stereo registration.

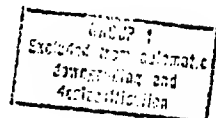
Good
(b) To provide quantitative data on stereo instrument design trade-offs affecting visual performance.

Task #6. Visual Mechanisms

Not
trying
much
- CNS - sort of pathology
~~(a) Measurement of visual accommodation by ultrasonography.~~

(b) Study of ocular mechanisms ^{such as} ~~other than~~ accommodation as predictors of the visual role in interpreter performance.

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Develop objectives for program first
Task #7. Training Research

(a) Develop a training package for NPIC microstereoscopes (a pilot program for equipment training to evaluate the feasibility of programmed instruction).

Task #8. Mensuration

> Don't understand - not standard at beginning -
To identify those errors of the mensuration process which are attributable to the human operator.

No Task #9. State-of-the-Art Review and Recommendation

State problem 1st
(a) To evaluate other research which may be applicable to NPIC.

No
(b) To develop a human engineering specification guide for NPIC equipment development.

see Task 3
Task #10. Consultation Services.

No independent aid
The contractor shall serve as associate contractor and human factors consultant to the sponsor.

Task #11. Recommendations

To recommend a long-range program which will state project justification, description, schedules, major milestones, expected results, estimated costs, and possible alternatives.

*Task 12 - Do systems analysis
Get Data*

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